

WHAT IS CLAIMED IS:

1. A server-client type system in which a terminal device on a client side is connected to a server through an ISDN network and corresponding one or at least two digital service units, wherein

5 said server comprises:

notification means for notifying, when a large volume of data to be transmitted whose volume is not less than a predetermined value is generated, to said terminal device as a transmission destination to the effect that the large volume of data is to be transmitted by the D-channel packet exchange; and

transmission means for, after the reception of a data transmission timing signal from said terminal device, starting transmission of said large volume of data using a B-channel to cause the terminal device to download the large volume of data, and

said terminal device comprises:

monitoring means for monitoring a state of a free B-channel line of all ISDN communication devices on the client side connected to said digital service unit to which the terminal device in question is connected upon receiving said notification of transmission of the large volume of data from said server; and

transmission allowance notifying means for notifying said server of said data transmission timing

signal by the D-channel packet exchange at timing not preventing use of a B-channel line with the help of said monitoring means.

2. The server-client type system according to claim 1, wherein

said terminal device comprises time zone determination means for determining, upon receiving said notification of transmission of the large volume of data from said server, whether the reception time is within a B-channel use-allowed time zone or not and when within the B-channel use-allowed time zone, transmitting said data transmission timing signal to said server.

3. The server-client type system according to claim 1, wherein

said terminal device

if the time when said notification of transmission of the large volume of data is received from said server is within a B-channel use-allowed time zone, upon a lapse of a first predetermined time with the B-channels of all the ISDN communication devices connected to said digital service unit to which the terminal device in question is connected being all free, notifies said server of a transmission allowance to cause the server to transmit said large volume of data, and

if the time when said notification of
transmission of the large volume of data is received
from said server is not within said B-channel use-
allowed time zone and at that time, a part of the B-
channels of all the ISDN communication devices connected
to said digital service unit to which the terminal
device in question is connected are free, notifies said
server of a transmission non-allowance to cause the
server receiving the transmission non-allowance to again
notify said terminal device to the effect that said
large volume of data is to be transmitted by the D-
channel packet exchange upon a lapse of a second
predetermined time.

4. The server-client type system according to claim
3, wherein

said terminal device conducts calling to said
server for downloading in place of said transmission
allowance notification.

5. The server-client type system according to claim
1, wherein

said terminal device conducts calling to said
server for downloading, if there is at least one free B-
channel line among all the ISDN communication devices
connected to said digital service unit to which the
terminal device in question is connected when the

terminal device receives said notification of
transmission of the large volume of data from said
server.

6. A server-client type system in which at least one
terminal device on a client side is connected to a
server through an ISDN network and corresponding one or
at least two digital service units, wherein

said server comprises:

notification means for notifying, when a large
volume of data to be transmitted whose volume is not
less than a predetermined value is generated, to said
terminal device as a transmission destination to the
effect that the large volume of data is to be
transmitted together with a necessary data transmission
time by the D-channel packet exchange; and

transmission means for, after the reception of a
data transmission allowance signal from said terminal
device, starting transmission of said large volume of
data using a B-channel to cause the terminal device to
download the large volume of data, and

said terminal device comprises:

announcement means for, upon receiving said
notification of transmission of the large volume of data
with the data transmission time applied from said server,
announcing said data transmission time to authorize a
user to determine allowance/non-allowance of

transmission; and

25 transmission allowance notifying means for
notifying said transmission allowance signal by the D-
channel packet exchange through operation of said user
based on the announcement of said announcement means.

7. A data downloading method in a server-client type
system for transmitting data generated at a server to a
terminal device on an arbitrary client side for
downloading through an ISDN network and a digital
5 service unit, comprising the steps of:

 the step, by said server, of notifying, when a
large volume of data to be transmitted whose volume is
not less than a predetermined value is generated, to
said terminal device as a transmission destination to
10 the effect that the large volume of data is to be
transmitted by the D-channel packet exchange,

 the step, by said terminal device receiving said
notification of transmission of the large volume of data,
of:

15 monitoring a state of a free B-channel line of
all ISDN communication devices connected to said digital
service unit to which the terminal device in question is
connected, and

 notifying said server of a data transmission
20 timing signal by the D-channel packet exchange at timing
not preventing use of a B-channel line, and

the step, by said server, of, after receiving the data transmission timing signal, starting transmission of said large volume of data using the B-channel to cause said terminal device to download the large volume of data.

8. The data downloading method according to claim 7, wherein

said terminal device, upon receiving said notification of transmission of the large volume of data from said server, determines whether the reception time is within a B-channel use-allowed time zone or not and when within the B-channel use-allowed time zone, immediately transmits said data transmission timing signal to said server and when not within said B-channel use-allowed time zone, monitors a state of free B-channel lines.

9. The data downloading method according to claim 7, wherein

said terminal device
if the time when said notification of transmission of the large volume of data is received from said server is within a B-channel use-allowed time zone, upon a lapse of a first predetermined time with the B-channels in all the ISDN communication devices connected to said digital service unit to which the

10 terminal device in question is connected being all free,
notifies said server of a transmission allowance to
cause the server to transmit said large volume of data,
and

15 if the time when said notification of
transmission of the large volume of data is received
from said server is not within said B-channel use-
allowed time zone and at that time, a part of the B-
channels in all the ISDN communication devices connected
to said digital service unit to which the terminal
20 device in question is connected are free, notifies said
server of a transmission non-allowance to cause the
server receiving the transmission non-allowance to again
notify said terminal device to the effect that said
large volume of data is to be transmitted by the D-
25 channel packet exchange upon a lapse of a second
predetermined time.

10. The data downloading method according to claim 9,
wherein

5 said terminal device conducts calling to said
server for downloading in place of said transmission
allowance notification.

11. The data downloading method according to claim 7,
wherein

said terminal device conducts calling to said

server for downloading, if there is at least one free B-
5 channel line among all the ISDN communication devices
connected to said digital service unit to which the
terminal device in question is connected when the
terminal device receives said notification of
transmission of the large volume of data from said
10 server.

12. A data downloading method in a server-client type
system for transmitting data generated at a server to a
terminal device on an arbitrary client side for
downloading through an ISDN network and a digital
5 service unit, comprising the steps of:

the step, by said server, of notifying, when a
large volume of data to be transmitted whose volume is
not less than a predetermined value is generated, to
said terminal device as a transmission destination to
10 the effect that the large volume of data is to be
transmitted together with a data transmission time by
the D-channel packet exchange,

the step, by said terminal device receiving the
notification, of announcing said data transmission time
15 to authorize a user to determine allowance/non-allowance
of transmission and notifying said transmission
allowance signal by the D-channel packet exchange
through operation of said user based on the announcement,
and

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